

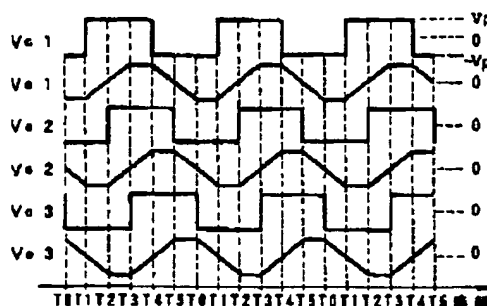
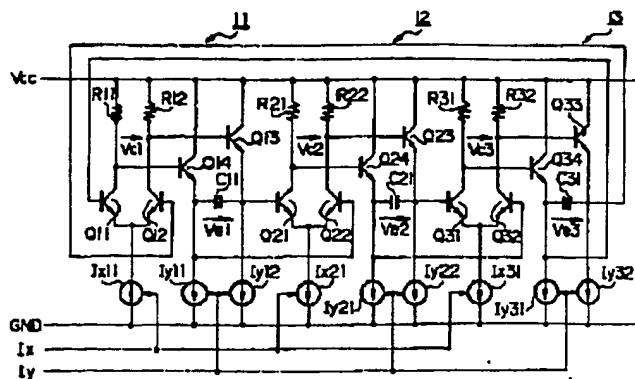
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TITLE : VOLTAGE CONTROLLED  
OSCILLATION CIRCUIT



ABSTRACT : PROBLEM TO BE SOLVED: To perform voltage controlled oscillation with less phase noise by making the window of mutual conductance function as an LPF and limiting a noise band in the finite time when a differential transistor pair is active when an input voltage provided with a certain slope is applied between the bases of the differential transistor pair.

SOLUTION: At the point T1 of time, when it is assumed that the collector voltage Vc1 of the transistor TR Q12 of a first stage is inverted, the both-terminal voltage Ve1 of the integration capacitance C11 of the first stage follows it up by the inclination of  $dV_e/dt = I_y/C$  at maximum. In this case, it is defined that Ve indicates the voltage value of the both-terminal voltage Ve1 of the integration capacitance C11 of the first stage, Iy indicates the current value of second current sources Iy11 and Iy12 and C indicates the capacitance value of the integration capacitance C11 respectively. Then, the collector voltage Vc2 of the TR Q22 of a second stage is inverted at the point T2 of time when the both-terminal voltage Ve1 of the integration capacitance value C11 exceeds a zero level, the collector voltage Vc3 of the TR Q32 of a third stage is inverted at the point T3 of time and then, the original point T1 of time is returned. Thus, the window of the mutual conductance Gm limits the noise band as the LPF.

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